



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

*Street address:* 629 East Main Street, Richmond, Virginia 23219

*Mailing address:* P.O. Box 1105, Richmond, Virginia 23218

TDD (804) 698-4021

[www.deq.virginia.gov](http://www.deq.virginia.gov)

L. Preston Bryant, Jr.  
Secretary of Natural Resources

David K. Paylor  
Director

(804) 698-4020  
1-800-592-5482

### HAZARDOUS WASTE PROGRAM OFFICE OF WASTE PERMITTING AND COMPLIANCE DIVISION OF LAND PROTECTION & REVITALIZATION

#### TEMPORARY EMERGENCY PERMIT

#### FOR TREATMENT OF HAZARDOUS WASTE

**Permit Granted to:** Virginia Department of Forensic Science  
Central Laboratory  
700 North Fifth Street  
Richmond, VA 23219-1416

**EPA Identification Number:** VAP000016376

**Permit Issuance Date:** November 28, 2011

**Permit Expiration Date:** Upon completion of action described in this Permit or by  
December 28, 2011, whichever occurs first.

#### Issued by

Department of Environmental Quality (DEQ)  
Office of Waste Permitting and Compliance  
629 East Main Street  
P.O. Box 1105  
Richmond, Virginia 23218

#### Authority

Commonwealth of Virginia Hazardous Waste Management Regulations (VHWMR), 9 VAC 20-60-270, promulgated under the authority of Chapter 14, Title 10.1, Code of Virginia (1950), as amended, and Title 40 Code of Federal Regulations (CFR) § 270.61, Emergency Permits.

**Name and Address of Permit Applicant**

Virginia Department of Forensic Science (DFS)  
Central Laboratory  
700 North Fifth Street  
Richmond, VA 23219-1416

Phone: (804) 786-4707

**Name, Address of Generator Facility, Phone Number, and EPA ID Number**

Virginia Department of Forensic Science (DFS)  
Central Laboratory  
700 North Fifth Street  
Richmond, VA 23219-1416

Phone: (804) 786-4707

Fax: (804) 786-6907

EPA ID No. VAR000013557 – Facility is a Conditionally Exempt Small Quantity Generator (CESQG)

**Contact Name and Phone Number**

Fred Frederick, Ph.D.  
Quality Assurance and Safety Coordinator  
Virginia Department of Forensic Science  
700 North Fifth Street  
Richmond, VA 23219-1416

Phone: (804) 588-4111

Fax: (804) 786-6907

Cell: 804-301-7620

e-mail address: [Fred.Frederick@dfs.virginia.gov](mailto:Fred.Frederick@dfs.virginia.gov)

Emergency Permit EPA ID No. VAP000016376

**Action Authorized**

The Virginia Department of Forensic Science, Central Laboratory, is permitted by this Temporary Emergency Permit to operate as a facility for the treatment of the hazardous waste listed below utilizing the procedures described under the heading "Treatment Procedures."

### **Description of Waste**

The hazardous waste consisted of: diethyl ether, from various manufacturers, under CAS No. 60-29-7, in three glass or metal containers of 500 ml or 1 liter each. The waste was five years old or less, and in a liquid state. The lower molecular weight ethers are fire and explosion hazards; when containing peroxides, they can detonate upon heating or shock.

### **Hazardous Waste Numbers/Codes**

D001, Ignitability, and Suspect D003, Reactivity.

### **Location of Waste – Description and Map**

The containers of diethyl ether were stored in the Third Floor Drug Laboratory and the Third Floor Chemical Storage Room located in the Virginia Department of Forensic Science, Central Laboratory, located at 700 North Fifth Street, Richmond, VA, 23219-1416

**(See Attachment 1A, Facility Location Map – Virginia Department of Forensic Science, Central Laboratory, and Attachment 1B, Floor Plan – Third Floor, Virginia Department of Forensic Science, Central Laboratory.)**

### **Qualifications of Individual(s) Performing the Treatment**

Reactives Management Corporation  
1025 Executive Blvd., Suite 101  
Chesapeake, VA 23320

Phone: (757) 436-1033

Fax: (757) 548-2808

**(See Permit Attachments 2A and 2B, Personnel Profiles and Qualifications of George C. Walton and Cherie C. Walton, Reactives Management Corporation.)**

### **When Treatment Occurred**

Treatment occurred on Wednesday, November 30, 2011. The waste handling and treatment (chemical neutralization) process occurred from approximately 9:00 AM to 1:00 PM.

### **Treatment Area – Description and Map**

The treatment of the diethyl ether took place indoors in the third floor Arson Laboratory located in the Virginia Department of Forensic Science, Central Laboratory, located at 700 North Fifth Street, Richmond, VA, 23219-1416.

Only Reactives Management Corporation treatment personnel were authorized in the Drug Laboratory, Chemical Storage Room, Arson Laboratory, and hallway, as applicable, during the handling, moving, and treatment of the waste material in each separate noted area when the emergency waste handling and treatment occurred. (The Attachment 1B, Floor Plan, identifies the location of the Drug Laboratory and Chemical Storage Room, where the waste was stored, and the Arson Laboratory, the treatment area, along with the transportation route within the third floor hallway.)

**Name and Phone Number of State and Local Officials Contacted Prior to Treatment**

Department of Environmental Quality  
Richard J. Criqui, Jr., C.P.S.S  
Environmental Engineer Senior  
629 East Main Street  
Richmond, VA  
Phone: (804) 698-4013  
e-mail: [richard.criqui@deq.virginia.gov](mailto:richard.criqui@deq.virginia.gov)

Virginia Department of Environmental Quality  
Piedmont Regional Office  
Kyle Winter, Deputy Regional Director  
4949-A Cox Road  
Glen Allen, Virginia 23060  
Phone: (804) 527-5020  
Fax: (804) 527-5106  
e-mail: [kyle.winter@deq.virginia.gov](mailto:kyle.winter@deq.virginia.gov)

Richmond Fire Department  
Lieutenant Christopher Armstrong, Acting Hazardous Materials Coordinator  
Richmond, Virginia  
Phone: (804) 381-2712

Virginia Commonwealth University  
Police Department  
Sergeant David Cifers (Shift Sergeant)  
Phone: (804) 828-1210

**Evacuation Route**

(See Attachment 3, Third Floor Evacuation Route Map.)

### **Treatment Procedures**

Containers of the diethyl ether were handled as potentially explosive materials and included the use of blast control and fire control equipment.

Only treatment personnel from Reactives Management Corporation were authorized in the Drug Laboratory, Chemical Storage Room, Arson Laboratory, and hallway, as applicable, during the handling, moving, and treatment of the waste material (in each separate noted area) when the emergency handling and treatment occurred.

Listed below are the general handling and treatment procedures which were used for the emergency treatment of the waste:

1. The Drug Laboratory, Chemical Storage Room, hallway, and Arson Laboratory (the treatment area) were selected, staged, and secured by the Department of Forensic Science and the Reactives Management Corporation personnel.
2. Reactives Management Corporation personnel used Personal Protective Equipment (PPE) to move the waste material (diethyl ether) from the Drug Laboratory and Chemical Storage Room to the Arson Laboratory Fume Hood (treatment area).
3. The hazardous waste containers in the Drug Laboratory and Chemical Storage Room were placed in a bomb box, covered with a bomb blanket and a fire blanket, and then moved on a cart to the Arson Laboratory, the treatment area.
4. The containers of diethyl ether (waste) were treated, one container at a time, in the Fume Hood in the Arson Laboratory, which was equipped with a horizontally-sliding multiple panel glass sash. Each container of waste was placed in a pail or tub (secondary containment) large enough to hold several times the volume of the material in the container being treated. A Lexan shield was provided by Reactives Management Corporation, the contractor, and placed in front of the waste material.
5. Glass and metal containers of diethyl ether were breached inside the Fume Hood behind the Lexan shield using remotely operated hole punching equipment.
6. The contents of each container were tested for the presence of peroxides using chemical test strips. If peroxides were present, the container of diethyl ether was treated (neutralized) by slowly adding sodium hydroxide until no peroxides remained in the container based on further testing. When no peroxides remained in a container, then the container was subsequently treated with hydroquinone to inhibit reformation of peroxides.

If peroxides were initially not present in a container, then the subject container of diethyl ether was treated with hydroquinone to inhibit the formation of peroxides.



7. The above process was repeated for each container until all of the waste was treated or neutralized so to remove the imminent treat to human health and the environment.
8. The treated waste was to be managed as hazardous waste at the Virginia Department of Forensic Science facility with the D001 hazardous waste code and manifested (shipped) off-site to a Permitted RCRA Treatment, Storage, Disposal (TSD) facility in accordance with the EPA and DOT requirements.

**Transportation Route and Time of Transportation: if material will be transported off-site**

The above mentioned waste was not transported offsite for emergency treatment.

**Permit Termination**

This Permit may be terminated by the DEQ at any time, without process, if the determination is made that termination is appropriate to protect human health and the environment.

**Permit Standards with which Compliance is Required**

Effective Immediately:

VHWMR Part III, 9 VAC 20-60-265, as adopted from 40 CFR, Part 265, Subpart Q, Chemical, Physical, and Biological Treatment.

VHWMR Part III, 9 VAC 20-60-264, as adopted from 40 CFR, Part 264, Subpart B, General Facility Standards, Subpart C, Preparedness and Prevention, and Subpart D, Contingency Plan and Emergency Procedures.

VHWMR Part III, 9 VAC 20-60-270, as adopted from 40 CFR, Part 270, EPA Administered Permit Programs: The Hazardous Waste Permit Program, and

VHWMR Part XII, Permit Application and Annual Fees, 9 VAC 20-60-1260, Purpose, Scope and Applicability

All residuals from the treatment are to be managed in accordance with VHWMR Part III, 9 VAC 20-60-262, as adopted from 40 CFR, Part 262, Standards Applicable to Generators of Hazardous Wastes.

**Reporting**

Within 30 days of permit expiration or termination, the Permittee shall submit to the DEQ a written Report detailing the times, pertinent events, sampling and analytical data, as applicable, and results of the permitted treatment activity, and any subsequent storage, treatment, and

disposal of the remaining waste residuals. Waste manifests, as applicable, for shipment of remaining residuals to a RCRA Treatment, Storage, or Disposal (TSD) Facility, or as applicable, the documentation associated with shipment or to a RCRA Subtitle D facility, shall be included in the Report submittal. Please mail this Report to the following address:

Department of Environmental Quality  
Attn: Richard J. Criqui, Jr., C.P.S.S.  
Environmental Engineer Senior  
629 East Main Street  
P.O. Box 1105  
Richmond, VA 23218  
[richard.criqui@deq.virginia.gov](mailto:richard.criqui@deq.virginia.gov)

### **Reason for Issuance**

The Department of Environmental Quality has determined that, because of the circumstances and nature of the waste, expedient action to protect human health and the environment was necessary. The waste treated was determined potentially unstable and treatment on-site was deemed appropriate to be protective of human health and the environment.

A verbal approval of the Emergency Permit was issued on November 28, 2011.

This written Emergency Permit is in accordance with the Virginia Hazardous Waste Management Regulations (VHWMR), 9 VAC 20-60 and 9 VAC 20-60-270, promulgated under the authority of Chapter 14, Title 10.1, Code of Virginia (1950), as amended, and Title 40 Code of Federal Regulations (CFR) § 270.61, Emergency Permits.

### **Public Comment Period**

A 30-day public comment period is provided. The public comment period is to be announced by public notice on December 2, 2011. The DEQ solicits written comments on the issuance of the Permit until 5:00 PM, January 3, 2012. The comments must be received at the DEQ's Richmond Office address before the end of the comment period.

Written comments are to be sent to Richard Criqui, Virginia Department of Environmental Quality, 629 East Main Street, P.O. Box 1105, Richmond, Virginia 23218. (Phone: (804) 698-4013; e-mail: [richard.criqui@deq.virginia.gov](mailto:richard.criqui@deq.virginia.gov).)

A copy of the Permit may be obtained and reviewed at the above DEQ Richmond Office, and at the DEQ's Piedmont Regional Office, (Attention: Kyle Winter, Deputy Regional Director), 4949-A Cox Road, Glen Allen, Virginia, 23060. (Phone: (804) 527-5020)

The DEQ will accept written comments from the public by mail or electronic mail (e-mail). All comments received by mail or e-mail must provide the commenter's name, address, and phone

number, and an e-mail address should be provided, if available. Comments will not have an effect on the issuance of this Permit; however, comments will be reviewed and considered with regard to issuance of future emergency permits.

### **Emergency Occurrence**

In the event of an emergency occurrence outside the scope of this Permit, contact Ms. Leslie A. Romanchik at (804) 698-4129, Hassan Vakili at (804) 698-4155, or Richard Criqui, at (804) 698-4013. Upon successful completion of the events authorized by this Permit, contact Richard Criqui, at (804) 698-401 or by e-mail at [richard.criqui@deq.virginia.gov](mailto:richard.criqui@deq.virginia.gov).

### **List of Attachments**

Attachment 1A, Facility Location Map, Virginia Department of Forensic Science (DFS)  
Central Laboratory, 700 North Fifth Street, Richmond, VA

Attachment 1B, Floor Plan, Third Floor, Virginia Department of Forensic Science (DFS),  
Central Laboratory, 700 North Fifth Street, Richmond, VA

Attachments 2A and 2 B, Personnel Profiles and Qualifications of  
George C. Walton and Cherie C. Walton, Reactives Management Corporation

Attachment 3, Third Floor Evacuation Route Map, Virginia Department of Forensic Science  
(DFS) Central Laboratory, 700 North Fifth Street, Richmond, VA

December 1, 2011  
Date

Leslie A. Romanchik  
Leslie A. Romanchik  
Hazardous Waste Program Manager



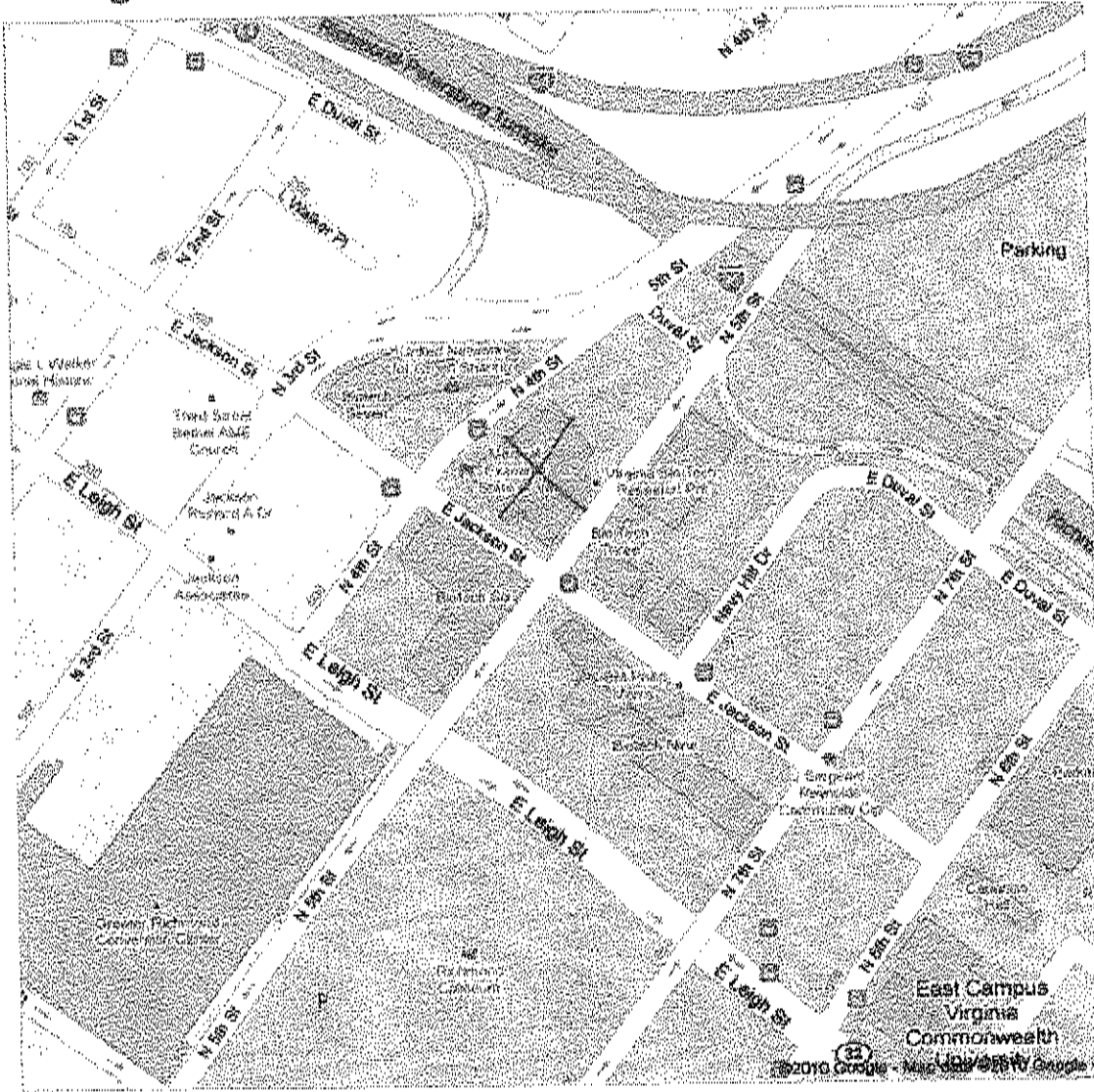
Virginia Department of Forensic Science, Central Laboratory  
Temporary Emergency Permit to Treat Hazardous Waste  
VAP000016376  
November 28, 2011

**Attachment 1A, Facility Location Map**

**Virginia Department of Forensic Science (DFS)  
Central Laboratory, 700 North Fifth Street, Richmond, VA**

# Google maps

Notes Building marked with X.



Attachment 1A

Virginia Department of Forensic Science, Central Laboratory  
Temporary Emergency Permit to Treat Hazardous Waste  
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November 28, 2011

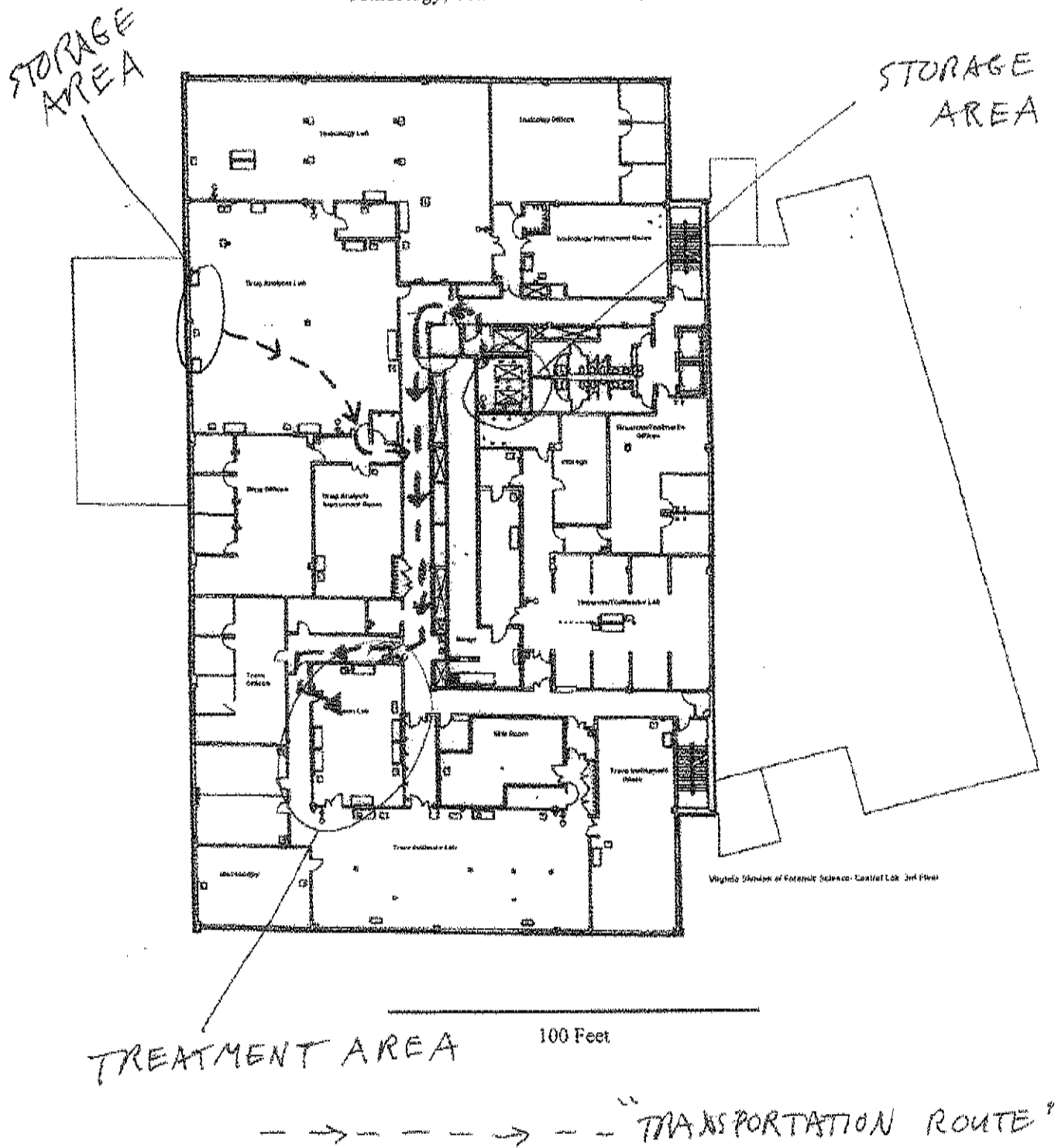
**Attachment 1B, Floor Plan, Third Floor**

**Virginia Department of Forensic Science (DFS)  
Central Laboratory, 700 North Fifth Street, Richmond, VA**

Attachment 1B

### THIRD FLOOR

Toxicology, Controlled Substances, Trace, Firearms





Virginia Department of Forensic Science, Central Laboratory  
Temporary Emergency Permit to Treat Hazardous Waste  
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**Attachments 2A and 2 B, Personnel Profiles and Qualifications**

**George C. Walton and Cherie C. Walton, Reactives Management Corporation**

Attachment 2A

Qualifications and Certifications  
**GEORGE C. WALTON**

**EDUCATION:**

B.S. (Botany) - The Pennsylvania State University - 1970  
M.S. (Biology) - The Pennsylvania State University - 1974  
U.S. Army Explosive Ordnance Disposal School, Redstone Arsenal, AL/ Indian Head, MD - 1976  
U.S. EPA Hazardous Materials Incident Response Operations Course, Edison, NJ - 1985  
University of Wisconsin - Madison, Environmental Auditing: Risk Management for the Future - 1988  
National Fire Protection Association Standard 1041 Instructor Training Course - 1991  
U.S. DOT (Transportation Safety Institute) International Maritime Dangerous Goods Code - 2000  
North Carolina Mine and Quarry Bureau X Instructor Fundamentals, 30 CFR 46 Training - 2001  
NASA Explosives Safety Management and Engineering, Langley Research Center, VA - 2003

**CERTIFICATIONS:**

Certified Hazardous Materials Manager (Master Level)  
Fellow, American Institute of Chemists  
Certified Safety Executive - W S O  
Response Manager, US EPA ERCS Zone II  
Senior Explosive Ordnance Disposal Technician (Designated Senior UXO Supervisor, 1998)  
Licensed Blaster/Permitted to Use Explosives (MA, NY, NJ, PA, VA; other states pending)

**PROFESSIONAL ORGANIZATIONS:**

International Association of Bomb Technicians and Investigators  
American Chemical Society  
American Institute of Plant Engineers  
Virginia Emergency Management Association  
American Institute of Chemists  
American Society of Safety Engineers (Professional Member)

**PUBLICATIONS and PRESENTATIONS:**

Thesis: The Effect of Germination Temperature on Seedling Development and Fatty Acid Composition of Corn Seedlings. The Pennsylvania State University, 1974.  
Walton, G.C. and Dobbs, D. Biodegradation of Hazardous Materials in Spill Situations. 1980 Spill Conference on Control of Hazardous Materials Spills. Louisville, KY, May 13 - 15, 1980.  
Walton, G.C. and McKown, J.E., Jr. Environmental Compliance in Cultural Institutions. National Conference on Cultural Property Protection. Smithsonian Institution, Washington, DC, February 21 - 25, 1993.  
Walton, G.C. Obey the Law! Save Money! 1995 Defense Reutilization and Marketing Service Contracting Symposium, Battle Creek, MI, October 10 - 12, 1995.  
Wilson, C.C. and Walton, G.C. Perchloric Acid Fume Hoods and Exhaust Systems American Institute of Plant Engineers *Facilities*, August, 1995.  
Walton, G.C. Disposal of Shock- and Water- Sensitive, Pyrophoric, and Explosive Materials in American Chemical Society Handbook of Chemical Health and Safety, R. J. Alamo, ed. New York: Oxford University Press. 2001

**Presentations of Hazardous Materials/Wastes and Safe Handling Procedures:**

American Chemical Society, Chicago, IL, 2001  
American Institute of Plant Engineers National Conference, Charlotte, NC, 1996  
American Society of Safety Engineer Professional Development Conference, Virginia Beach, VA, 1992

Virginia Department of Emergency Services, 1985, 1993, 1995, 1997, 1998, 2000  
Virginia Environmental Health Association, Danville, VA, 1985  
Virginia Emergency Management Association, Roanoke, VA, 1986  
Virginia Safety Association, Williamsburg, VA, 1990

## **EXPERIENCE:**

1976 - 1979: Commander, U.S. Army Explosive Ordnance Disposal Detachment, Edgewood Area, Aberdeen Proving Ground, MD  
1979 - 1980: Field Supervisor, O.H. Materials, Findlay, OH  
1980 - 1981: Manager Employee Safety, Norwich-Eaton Pharmaceuticals, Norwich, NY  
1981 - 1984: Operations Manager, Emergency Technical Services Corporation, Flanders, NJ  
1984 - 1986: Technical Director, Industrial Marine Services, Norfolk, VA  
1986 - present: President, Reactives Management Corporation, Chesapeake, VA

## **REPRESENTATIVE PROJECTS (General):**

Maryland, 1977: Established an operations plan and commanded a 45-man crew in the recovery of approximately 100 World War I-era chemical shells. Shells were both dud-fired and buried in a tidal marsh. Operation plans included environmental impact and multi-media (air, water, wetlands, DOD surety material) compliance requirements.

Virginia, 1979: While temporarily assigned to EPA Region III Regional Response Team, commanded Army detachment and developed site safety plan for the destruction of approximately 40,000 pounds of white phosphorus and contaminated debris. Emergency permitting and range operations coordinated through EPA Office of Air, VA Air Pollution Control Board and Army Operations Center.

California, 1980: Wrote proposal and developed safety plan for the decontamination and dismantling of organophosphate nerve agent test facility. Work was completed ahead of schedule and met company/state standards. Excavation contamination, run-on/ run-off control and sampling and analysis protocols coordinated with regional and state water control agencies.

New York, 1981: Developed system and safety plan to remove explosive levels of organic perchlorates from laboratory fume hood system in teaching and research hospital. The main laboratory building, two blocks long and up to 17 stories tall, included over 350 separate fume hoods in seven separate exhaust systems. Decontamination met standards for timeliness and effectiveness.

New Hampshire, 1982: Developed site safety plan and conducted on-site destruction of shock-sensitive, explosive and reactive wastes at US EPA Region I Superfund site. On-site operations exceeded state/federal standards for human and environmental safety.

Connecticut, 1988: Explosive investigator on team investigating the explosion of a drum of mixed hazardous materials and the destruction of a trailer in interstate commerce. Deposition prepared for legal defense included DOT, OSHA, EPA, CPSC, and state compliance requirements.

Maryland, 1989: Hazardous materials manager for insurance company investigation of costs of emergency response to and clean up at ink manufacturing facility fire. Investigation resulted in refund of over \$50,000 in response and disposal costs.

Maryland, 1992: Developed system to identify contents, repair and secure valve, package and transport cylinder of nitrogen tetroxide from federal research facility to management facility in Pennsylvania. Operation included compliance programs for OSHA, EPA (air and waste), and DOT.

Virginia, 1996 X 1997: Provided landfill gas monitoring to locality with closed municipal solid waste landfill to determine if methane was forming and/or moving below the landfill cap.

Virginia, 1996 X 2001: Developed decontamination and operations plans, then conducted medical waste cleanups at solid waste management facility, at municipal waste incinerator, and at private residence after suicide. Operations met or exceed standards for compliance, timeliness, and cost control.



Virginia, 1997: Developed and implemented closure plan for RCRA hazardous waste storage facility to include sampling plan, decontamination procedures, waste disposal, and QA/QC controls.

Pennsylvania and Virginia, 1997: Provided expert witness support in strategy, depositions, and testimony for private business on whose land hazardous materials had been dumped, causing two employees to receive medical treatment; for contractor suing DOD on contract dispute for hazardous materials removal; and for US Department of Justice for Superfund emergency removal cost recovery from private industry.

Nationwide, 1999 X 2000: Provide chemical safety and environmental compliance information during implementation of internet-based database Chemical Inventory Management System (CIMS) at NOAA facilities from New Jersey and Florida to California and Alaska.

Virginia, 2003 X Developed safety manual to comply with Clean Air Act, HAZWOPER Standard, and general environmental health and safety regulations for multi-state refrigeration company

#### **REPRESENTATIVE PROJECTS (Hazardous Materials):**

Maryland, 1976: Supervised the removal and transportation of radioactive-contaminated containers and the decontamination of steel shelves and concrete floors.

Michigan, 1979: Developed system and wrote proposal for the installation and operation of IMM gpd underground recovery and treatment system to remove trichloroethylene from ground water. Design and operations were coordinated with state and federal public health and environmental agencies. System met criteria for deadlines, standards and costs.

Indiana, 1979: Established air and water sampling protocols and site safety plan for 50-man crew on train derailment site. Pollutants were 100,000 gallons of methacrylic acid, ethyl acrylate, acetic anhydride and isobutanol. Off-site disposal programs developed with Indiana State Board of Health after presentations at public meetings.

New York, 1979: Developed safety plan and supervised clean up operations for truck accident involving 40,000 pounds of mono-chloroacetic acid. Clean up exceeded regional/ state standards for timeliness and effectiveness.

New York, 1981: Established and operated chemical safety program for 400-man research and development division and 400-man chemical production facility. Elements of the program included hazard evaluation, selection of safety equipment and safe working conditions, chemical right-to-know training and spill clean up procedures. Accident rate reduction and cost control program met all standards.

Florida, 1982: Developed site safety plan and local/state compliance plans to chemically treat, transport and destroy on-site shock-sensitive peroxidized tetrahydrofuran.

South Dakota, 1983: Developed site safety plan, coordinated local and state groups and conducted on-site disposal of peroxidized ether. Disposal operations were used to develop training programs for local/state emergency response teams.

Virginia, 1985: Managed emergency response and clean up of 5,000 gallon gasoline spill and fire in municipal storm sewers and tidal waters. Clean up effort met US Coast Guard/ state water pollution and city fire code standards.

Virginia, 1986: Developed site safety and operations plans and managed response to remove and destroy by chemical reaction approximately 500 one-pound cans of calcium carbide in burned and partially collapsed building. Operations permitted through state and federal environmental agencies.

Kansas and Nebraska, 1988: Developed procedures, safety/work plan and coordinated work and training with local/state agencies to down load cylinders of chloropicrin grain fumigant and dispose of wastes. Field-produced videos of operations were used training by state fire marshalls.

Virginia, 1989: Developed safety plans and managed response crew in removing drums and compressed gas cylinders from debris on remote river banks after major flooding.

Virginia and California, 1989: Developed safety and work plans and coordinated compliance with local/state agencies for PCB decontamination from working transformer manufacturing facilities.

Virginia, 1990: Supervised the emergency response and clean up of hazardous materials released during ship collision in Chesapeake Bay. Developed procedure to treat wastes on-site, saving \$55,000 in transportation and disposal costs.

Virginia, 1992: Developed emergency response action plans and managed response to cylinder of sulfur dioxide abandoned on interstate highway. Emergency response met local/ state standards for timeliness, effectiveness and safety.

Virginia, 1995: Lead response team in isolating, on-site treatment of residues and decontamination of RCRA-regulated hazard waste storage building after methyl ethyl ketone peroxide (MEKP) explosion at a military facility. Operations complied with DOD, federal and state agency policies on waste identification and management.

District of Columbia, 1996: Disposed of various compressed gases including chlorine dioxide and pentaborane at DOD research facility. Operations met or exceeded safety standards.

Maryland, 1996: Disposed of World War II organo-phosphate and other insecticides at an agricultural research facility. Work included securing state permits and designing and building portable gas scrubbing system to empty and decontaminate compressed gas cylinders.

Virginia, 1996 X 1998: Disposed of approximately 1600 used, damaged, or otherwise unserviceable acetylene and ammonia cylinders for commercial scrap iron facility, industries, and military facilities.

Colorado, 1997: Designed and implemented on-site treatment system of organic peroxides in a radiation containment area at US DOE Rocky Flats Environmental Test Facility.

North Carolina, 1997: Designed and implemented system to clear elemental lithium and organo-lithium deposits from nearly 1700 feet of pipes in commercial production facility. Work was performed in manlifts 30 feet above the floor, in argon-filled glove bags, while wearing aluminized Nomex personal protective equipment.

Virginia, 1997: Developed and implemented procedures to remove chloropicrin (military riot control agent PS) vials from door of old safe under emergency conditions and decontaminate PS from second safe after it had been dropped by movers.

Virginia, 1998: Developed procedures and lead sampling team to collect samples of acids and bases, including hydrofluoric acid, from degraded drums at closed fish meal processing facility.

Georgia, 2000: Developed procedures and lead team in decontaminating and dismantling the dioxin-contaminated Chemical Toxicant Laboratory at the Centers for Disease Control and Prevention, Chamblee, GA. Project was completed on time and exceeded clean up standards.

Georgia, 2003: Lead team in identifying and conducting on-site treatment of compressed gas cylinders at a Superfund site in Atlanta.

### **REPRESENTATIVE PROJECTS (Training):**

Virginia, 1991 X 2003: Developed course materials, served as course coordinator and taught HAZWOPER 24- and 40-hour initial courses, and 8-hour annual review and supervisor courses at Old Dominion University, Norfolk, and George Mason University, Fairfax, VA, and for industrial and commercial organizations.

Hawaii and Virginia, 1991 X 1997: Developed and taught sampling theory, techniques and regulations classes. The programs were conducted for Navy, DOE, and Army personnel from New Hampshire, Virginia, Idaho, California, and Hawaii, as well as industrial customers and included RCRA, TSCA, CWA and CAA sampling protocols.

New Jersey, 1992: Prepared and presented course on explosive and reactive materials chemistry, identification and emergency destruction to emergency response personnel for US EPA Region III as part of annual HAZWOPER refresher training program.

Virginia, 1992 X 2003: Conducted one-day training seminars on Department of Transportation Hazardous Materials Regulations and changes under Hazardous Materials Docket 126 series, 181 and 215 series for American Society of Safety Engineers Professional Development Conference, government employees and military personnel, and hazardous materials employees.

Continental United States, 1996: Developed and taught customized confined space entry program for over 200 US Air Force Explosive Ordnance Disposal personnel at 12 bases.

Virginia and Georgia, 1996 X 2002: Created and taught customized medical gas safety, chlorine and sulfur dioxide disinfectant safety and compliance, medical waste and RCRA waste generator courses for Moody AFB environmental, Ft. Eustis medical and dental, and various commercial construction company personnel.

Virginia, 1997: Developed and taught customized confined entry course to design, engineering, and building inspector personnel at architectural and engineering firm.

Virginia, 1999: Developed and taught an eight-hour program on explosive recognition, explosive safety, and waste explosive management for universities in the Mid-Atlantic region.

Georgia, 2001: Developed and taught confined space entry programs for workers in peanut mills.

Washington, DC, 2001 X 2002: Conducted HAZWOPER First Responder, Awareness Level, and HAZWOPER Hazardous Materials Technician basic and refresher programs for the Government Printing Office.

Virginia, 2003: Developed and taught explosive users course at NASA Langley Research Center

### **REPRESENTATIVE PROJECTS (Explosives and Explosive Ordnance Disposal):**

Maryland, 1976: As US Army FORSCOM EOD detachment commander on TECOM base, supervised over 300 explosive incidents and provided input to TECOM range operations for environmental compliance and explosive safety and NEPA-based impacts.

Pennsylvania, 1987: Developed site safety plan and coordinated removal and destruction of shock-sensitive and explosive wastes from the Publicker Industries Superfund site, Philadelphia. Explosive work met Clean Air Act standard for NAAQS non-attainment area. Compressed gas cylinder disposal/recycling exceeded federal cost control standards.

Maryland, 1989: Provided explosive ordnance disposal support to US EPA team conducting sediment coring operations in former artillery testing and impact area in Chesapeake Bay.

New Jersey, 1981 to 1984: Developed facility safety and compliance programs, site and transportation contingency plans and training program for interim status TSDF operations in disposing of explosive, shock-sensitive and reactive hazardous wastes. Volume of wastes disposed of at site increased four-fold to 40,000 pounds per year.

Virginia, 1989: Developed safety and work plans and conducted operations to comply with CERCLA-mandated destruction of 9,000 pounds of nitro-carbo-nitrate explosive materials. Air emissions and run-off control met federal state standards. Work was completed ahead of schedule and under cost.

Florida, 1989: Wrote plans, developed system and supervised crew in the location and recovery of nearly 160,000 hand grenade fuzes and components. Plans included chrome and lead contaminated ground-water and soil management.

Virginia, 1991: Developed plan and supervised the removal of 6000 gallon UST containing nitrocellulose sludge as well as separate tanks of toluene and MEK. Procedure included in-ground tank cleaning under inert atmosphere prior to tank removal.

Pennsylvania, 1992: As contractor supporting an enforcement action, wrote explosive safety and operations annexes to site safety plan and lead explosive disposal team during EPA enforcement at a operational artillery and mortar fuze manufacturing facility. Duties included compliance with ATF, EPA, DOT and state agencies, staffing plans, conducting explosives operations and making presentations at public meetings. Coordinated Army EOD support with EPA field operations.

Pennsylvania and Virginia, 1992: Recovered, identified and disposed of ordnance-related materials and explosives on Superfund sites, coordinating ATF, DOD, DOT, EPA and state waste disposal and explosive compliance requirements.

Iowa, 1993: Planned operation and lead team using magnetometers to locate and recovery M-55 and other sub-munitions from closed industrial ordnance test range. Plans included ATF, DOD, DOT, EPA and state compliance components. Work was completed ahead of schedule and on budget.

Virginia, 1993: Developed procedures and lead team in sampling and destruction of degraded methyl ethyl ketone peroxide. Work included sampling explosive materials and obtaining US DOT exemption to transport forbidden materials on public highway in addition to RCRA open burn/ open detonation operation permit and air (NESHAPS) permit.

South Carolina, 1994: Developed and implemented procedures to open and treat containers of air- and water-reactive materials and unknown explosive products/ wastes at the Diversified Explosives (Divex) Superfund site.

Maryland, 1995: Wrote and implemented proposal to identify, transport and dispose of research-based explosive wastes from ordnance research and development laboratory. Operations included all phases of explosive waste management from worker safety through material identification, RCRA and DOT hazard characterization and DOD environmental compliance strategies to disposal alternatives and specific facility/disposal process selection.

Hawaii, 1995: Wrote safety plan and provided EOD support for surface and down-hole unexploded ordnance (UXO) clearance for hydrological study of former impact areas at Schofield Barracks. EOD support included use of data quality objectives for ground water study.

Virginia, 1995 X 2003: Wrote safety and operations plans and provided EOD support for UXO identification and recovery from Nansemond Ordnance Depot, a Formerly Utilized Defense Site (FUDS). Innovative clearance procedures were developed to clear selected areas at the same quality assurance standards but more rapidly, with significantly reduced costs.



Virginia, 1996: During compressed gas cylinder management at a scrap metal yard, managed the recovery and coordinated pick-up and transportation by US Navy personnel of two 16" shells, one each Mk 83 and Mk 84 bombs, and components of various sea mines.

North Carolina, 1997: Provided emergency response support for the remote opening and stabilization of a picric acid bottle at a nuclear power plant. Operations exceeded state and company standards for safety, timeliness, and environmental compliance.

Virginia, 1997: Provided UXO clearance at a former landfill at the Naval Surface Warfare Center, Dahlgren Division during remediation and capping.

Florida and Virginia, 1998: Provided EOD support to combined ATF, EPA, and commercial response team after a fatal explosion at an aluminum recovery plant. Ordnance and explosive recovered included over 1500 non-electric blasting caps, 40mm grenade cartridges, 90mm recoilless rifle cartridges, and various pyrotechnic and signalling devices and flares.

South Carolina, 1998: Developed plans and led five man team of retired EOD personnel in search of two Mk-47 Depth Bombs in 40 feet of water off the former Charleston Naval Shipyard. Techniques used included CHIRP sonar, magnetometry, and open water diving.

Virginia, 2000: Led commercial emergency team working with ATF and state environmental and emergency management departments to identify, package, and remove over 3,000 pounds of explosives, pyrotechnic, oxidizing, and other hazardous materials from an illegal storage site.

Ohio, 2001: Conducted disposal of explosive and shock-sensitive waste at Wright Paterson Air Force Base. Met all safety and compliance DOT standards for shipping explosives by air and OEPA standards for treatment.

Virginia, 2001: Provided UXO support to location and recovery of 3.5" rockets, 90 mm and 105 mm gun and 106 mm recoilless rifle casings, 40 mm grenades, and miscellaneous other items.

Kansas, 2003: Developed procedures and lead team during removal of perchloric acid fume hood, duct work and fan at University of Kansas Medical Center.

# Attachment 2 B

## Qualifications and Certifications CHERIE C. WALTON

### EDUCATION:

- α A.A.S. (Social Work), Columbus Technical Institute - 1976
- α B.S. (Psychology), University of the State of New York - 1990

### CERTIFICATIONS:

- α Certified Safety Professional (#17406)
- α CPR/First Aid
- α Department of Transportation HazMat Employee
- α Hazardous Waste Operations & Emergency Response (HAZWOPER 40-hour) with current refresher
- α HAZWOPER Supervisor
- α Licensed Blaster

### PROFESSIONAL ORGANIZATIONS/COMMITTEES:

- α American Society of Safety Engineers
- α City of Chesapeake Groundwater Committee B Vice Chairman
- α National Contract Management Association
- α Restoration Advisory Board, Former Nansmond Ordnance Depot B Vice Chariman
- α Tidewater Association of Service Contractors

### PUBLICATIONS:

- α Wilson, C.C., and Walton, G.C. Perchloric Acid Fume Hoods and Exhaust Systems. AIPE Facilities, July/August, 1995.

### REPRESENTATIVE PROJECTS:

#### REGULATORY & CONSULTING

1993 - present:

- α Perform Phase I and OSHA compliance audits and health/safety inspections for various industrial and commercial facilities including automobile dealers, manufacturing facilities, and a medical/dental facilities. Developed, implemented, and taught several Hazard Communication programs for various types of industries.

- α Provide on-going transportation-related regulatory compliance research and consulting for an international automotive parts manufacturer. Includes research of US DOT and international regulations regarding shipment of hazardous materials by air, ground, and vessel.

- α On-going consultant to national company that produces training videos and interactive CD-ROM software training programs. Duties typically include reviewing scripts for technical accuracy, reviewing in-process and finished videos, and occasionally appearing in videos to demonstrate various techniques, personal protective equipment, or other material as appropriate.

- α Developed Emergency Response, Respiratory Protection, and other Standard

## REPRESENTATIVE PROJECTS (continued):

Operating Procedures (SOPs) and programs for various clients.

⌘ Drafted and edited emergency treatment permits for the states of Virginia and Maryland.

⌘ Draft and edit training manuals for courses in:

- the transportation of hazardous materials including DOT, IATA, and IMDG regulations;
- several OSHA programs including the HAZWOPER series, confined space entry, bloodborne pathogens, hazard communication, respiratory protection, etc.
- EPA programs and regulations such as hazardous waste management, universal waste management, land disposal restrictions, etc.
- numerous health, safety, and chemical-specific courses including compressed gas cylinder management, medical gases, explosives safety, hantavirus, small spills and leaks, laboratory safety, etc.

⌘ Drafted and edited a Closure Plan for a Commonwealth of Virginia hazardous waste container storage area in accordance with state and federal regulations.

⌘ Completed a Virginia State Operating Permit (air permit) application for a barge building facility. The permit was issued with no changes to the original application. Also continue to complete associated annual reports and provide related consulting.

⌘ Completed a Virginia Pollution Discharge Elimination System/National Pollution Discharge Elimination System (VPDES/NPDES) permit application for a barge building facility.

⌘ Draft and edit Transportation Security Plans in accordance with DOT requirements.

## **CHEMICAL**

Norfolk, Virginia, 1997 - present: Chemically accelerated the reaction (polymerization reaction) of several hundred gallons MEKP with resin.

Reidsville, North Carolina, 1995: Reduced, stabilized, and packed isopropyl ether and benzoyl peroxide for Laidlaw Environmental Services (now Clean Harbors).

Norfolk, VA, 1995: Was part of an emergency response team that was mobilized as a result of an explosion of lab packed containers of MEKP. Chemically accelerated the reaction (polymerization reaction) of the remaining MEKP to prevent further explosions. Clean-up operations included the decontamination of the building and its contents.

### REPRESENTATIVE PROJECTS (continued):

- Various US locations, 1994 - present: Performed the hydration and repackaging of many pounds of picric acid.
- Franklin, VA, 1996: Safely opened, treated, and repackaged a one pound jar of mercuric oxycyanide.
- Virginia 1996 - present: Managed approximately numerous vials of chloropicrin that were discovered in various safes throughout the Tidewater area. All vials were carefully removed from the door of the safe, dislodged from their protective case, and packaged for transportation and disposal.
- Charlotte, NC, 1997: Was part of an emergency response team mobilized to manage aged, dry picric acid at a nuclear power plant. The material was rehydrated and diluted without incident.
- Golden, CO, 1997: Remotely opened and managed 2 containers of aged MEKP and one container of 2-phenoxyethanol at Rocky Flats Environmental Technology Site.
- Cincinnati, OH, 1999: Decontaminated and disassembled six perchloric acid-contaminated fume hoods and associated duct work and fans in a closed FDA laboratory facility. Twenty four wipe samples were obtained and analyzed using an ion-specific electrode.
- Atlanta, GA, 1999: Decontaminated a dioxin lab for Centers for Disease Control & Prevention (CDC) Chamblee facility. The lab had been used to synthesize dioxin standards in the 1980s and was closed in the early 1990s. More than fifteen cubic yards of waste and debris was removed from the lab including chemicals such as dioxin standards, aflatoxins, flammables, and poisons; laboratory instruments; glove boxes; HEPA filters; and various other items. The lab was then thoroughly decontaminated. Twenty wipe samples and three air samples were obtained to confirm the lab was safe for re-occupancy.
- Various US locations, 1999 - 2000: Completed chemical inventory for numerous National Oceanic and Atmospheric Administration (NOAA) laboratories throughout the United States. During inventories, identified hazardous materials that were aged, degraded, and/or unsafe; recommended safe handling, storage, and segregation techniques; and evaluated each laboratory for OSHA compliance. Assisted in the development of database data entry protocols.
- Hampton, VA, 2000: Performed destruction by detonation of diglyme, 1,4-dioxane, and one severely degraded container of isoprene located at the NASA facility.

### **COMPRESSED GAS CYLINDERS**

- Washington, D.C., 1996: Assisted in the treatment of one cylinder of hydrochloric acid and one cylinder of chlorine dioxide.



## REPRESENTATIVE PROJECTS (continued):

Silver Spring, MD, 1997: Managed six methane cylinders, each being approximately 2' wide x 23' long. The cylinders had been manifolded together, and the manifold was damaged. Torches were rigged, and the product burned off. All valves and fittings were removed. On a separate trip to the same BRAC facility, a propane tank approximately 8' in diameter x 50' long was emptied. All fittings and valves were removed.

Chesapeake, VA, 1996: Was part of the team that managed approximately 1200 compressed gas cylinders found in a scrap metal facility. An initial survey was performed to determine the types and condition of the cylinders. Laborers using heavy equipment helped distribute cylinders from the main pile and the other areas to the staging and work areas. All cylinders were examined thoroughly and managed according to condition and contents.

## **EXPLOSIVES & UNEXPLODED ORDNANCE**

NSWC White Oak, Silver Spring, 1995: Assisted in the inventory and management of a large quantity of explosive wastes, including lab pack operations and manifesting.

Suffolk, Virginia, 1995 - present: Performed numerous UXO surveys (including down-hole monitoring) and UXO QC work at the Nansmond Ordnance Depot, a Formerly Utilized Defense Site (FUDS) for federal and state agencies and private engineering firms.

Charles City, VA, 2000: Provided emergency response services for the Virginia Department of Emergency Services and Virginia Department of Environmental Quality in response to a request for assistance in managing an incident involving hundreds of pounds of fireworks and chemicals used in making fireworks. Provided identification, segregation, packaging, transportation, and disposal of hazardous and non-hazardous materials found at the scene.

Hampton, VA, 2002 - present: Pyrotechnic Support Engineer for NASA Langley Research Center. Provide oversight and management of NASA's explosives users programs as well as technical and NASA-specific support as needed.

Blacksburg, VA, 1999 - present: Performed several types of explosive waste management over the years, including open burn, open detonation, and chemical treatment of explosive wastes.

Fort Eustis, VA, 2004: Provide UXO surveys and clearance support for various construction projects at Fort Eustis.

Virginia Department of Forensic Science, Central Laboratory  
Temporary Emergency Permit to Treat Hazardous Waste  
VAP000016376  
November 28, 2011

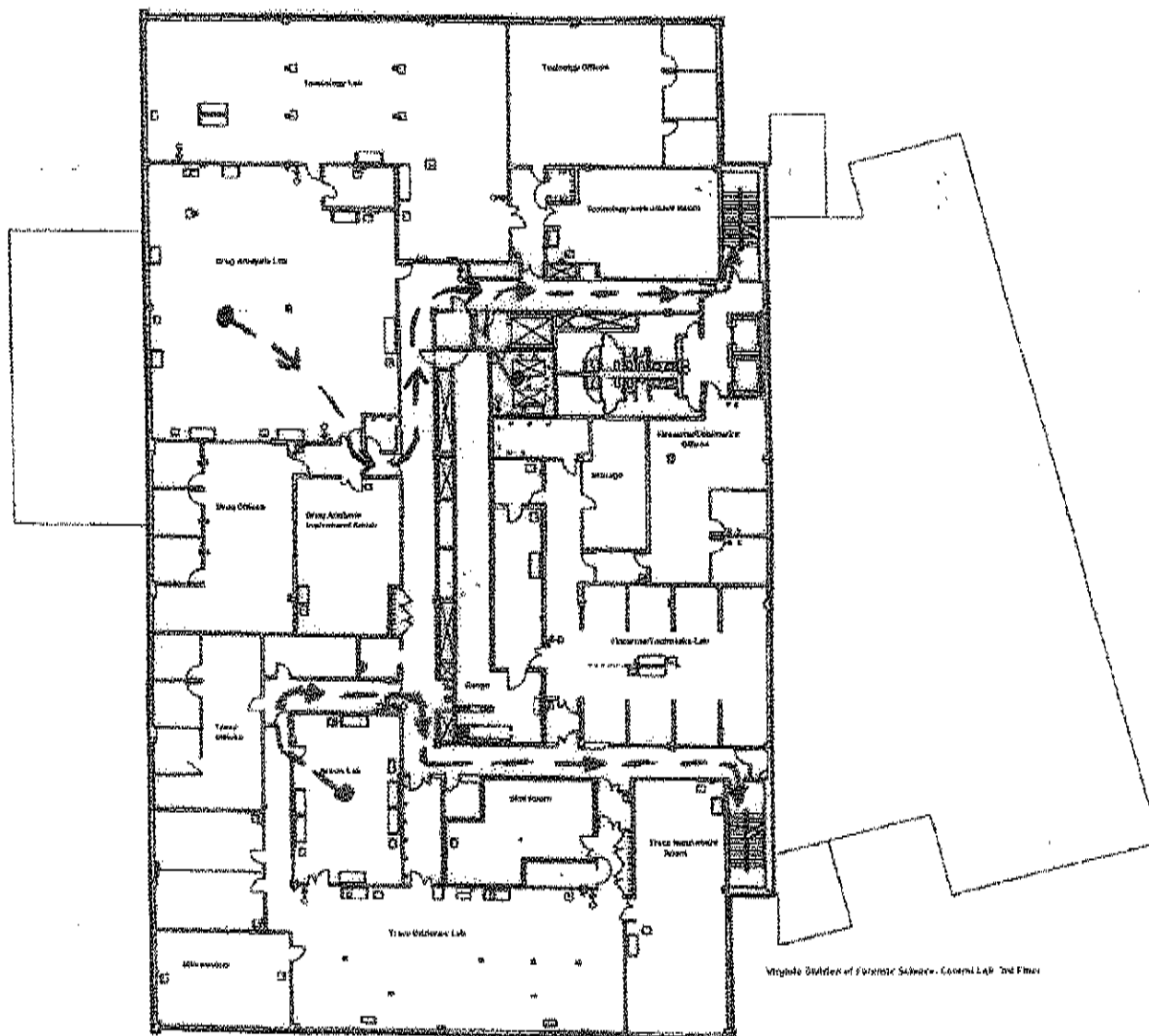
### **Attachment 3, Third Floor Evacuation Route Map**

**Virginia Department of Forensic Science (DFS)  
Central Laboratory, 700 North Fifth Street, Richmond, VA**

3

# EVACUATION ROUTES

## Toxicology, Controlled Substances, Trace, Firearms



Windsor Division of Forensic Science, Court 240 2nd Floor

100 Feet